

25 million sportsmen
U.S.A.

Marine Biological Laboratory
LIBRARY
NOV 9 - 1958
WOODS HOLE, MASS.

WOODS HOLE
OCEANOGRAPHIC INSTITUTION
NOV 9 - 1958
WOODS HOLE, MASS.



NATIONAL SURVEY OF FISHING AND HUNTING



NATIONAL SURVEY OF FISHING AND HUNTING

A REPORT ON THE FIRST NATIONWIDE
ECONOMIC SURVEY OF SPORT FISHING
AND HUNTING IN THE UNITED STATES,
DURING THE CALENDAR YEAR

1955

UNITED STATES DEPARTMENT OF THE INTERIOR

Fred A. Seaton, *Secretary*

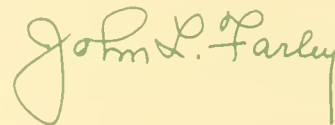
FISH AND WILDLIFE SERVICE

John L. Farley, *Director*

Circular 44



A survey of hunting and fishing in the United States has long been needed to determine the importance of these truly American sports in our national economy. We now have reliable national figures. In these days of fast-increasing human populations, of growing tensions, and of generally recognized need for recreation, the facts and figures in this National Survey of Fishing and Hunting have especial significance. The sums are in millions and in billions. The importance of hunting and fishing in our economy, and in our way of life, is now a matter of record. The results of this survey will be invaluable in planning fish and game management for the future.

A handwritten signature in cursive script that reads "John L. Farley". The signature is written in dark ink and is positioned above the printed name.

Director



When a typical American family drives out to Little Pond for a Saturday of fishing, or when a father and son and their dog set out for an afternoon of hunting, they have lots of company. Probably more than the average citizen of any other great modern nation, the average American enjoys sport fishing and hunting.

Fishing and hunting have always been part of America. When colonists first came to this continent, the New World's fish and game meant the difference between life and death. Men fished and hunted then to feed their families. Today, long after they have ceased to be the basis of subsistence, fishing and hunting continue as an important part of our standard of living by providing recreation for millions of Americans.

There have been many evidences of the importance of fishing and hunting in modern America. Millions of fishing and hunting licenses are sold each year. Many thousands of people belong to fishing and hunting clubs. Sales of sport-fishing tackle and hunting arms and ammunition mount to millions of dollars annually.

But despite the many evidences that these sports are big in recreational importance and in economic importance, nobody has known exactly how big. Rough estimates have been made that the Nation's sportsmen spend anywhere from a billion to \$10 billion a year for goods and services in connection with their fishing and hunting pursuits, but these have been little more than guesses.

Fishing and hunting licenses do not tell the whole story, because on the one hand many fishermen and hunters don't have to have licenses and on the other hand many persons have more than one kind. Only part of the army of fishermen and hunters belong to clubs. And the production of fishing and hunting equipment tells only part of the story about the economic importance of these sports.

In the last decade, the question of the economic importance of these forms of recreation has become of greater and greater concern to those interested in the conservation of fish and wildlife. Since World War II, changes in land use and water use have proceeded apace. Conservation agencies have sought to conserve fish and wildlife resources affected by these changes. Often the inclusion of conservation provisions in land-use and water-use projects has faced problems of justifying cost as compared with economic benefits. Consequently, the conservation agencies have needed more information on the economic aspects of sport fishing and hunting as a partial measure of the value of fish and wildlife conservation.

Excise taxes on sport-fishing tackle and on sporting arms and ammunition, which produce about 20 million dollars a year, have been allocated by Congress to special funds for fishing and hunting improvement. Through the U. S. Fish and Wildlife Service and the conservation or fish and game departments of the States, these taxes on fishing and hunting equipment are used as Federal Aid to the States in cooperative programs for fish and wildlife restoration. In carrying out their management programs, fish and game agencies have felt the need for more exact figures to guide them.

In the last few years about a fourth of the State fish and game agencies have made economic surveys of fishing and hunting in their areas. Made at different times and by various methods, these surveys could not be combined to give the nationwide information needed.

The need for accurate countrywide information on sport fishing and hunting and their effect on the national economy reached a point in 1953 when the U. S. Fish and Wildlife Service, the State fish and game agencies, the Wildlife Management Institute, the National Wildlife Federation, the Sport Fishing Institute, and other groups began giving serious consideration to conducting a comprehensive national study to obtain reliable answers. At its annual meeting in September 1954, the International Association of Game, Fish, and Conservation Commissioners (comprising the fish and game commissioners and directors of the 48 States and the Canadian Provinces) recommended that the U. S. Fish and Wildlife Service carry out a nationwide survey financed from Federal Aid administrative funds.

To make the survey as accurate and as objective as possible, it was determined to have it done by independent experts in the field of national surveys. After approval by the Bureau of the Budget, outstanding firms specializing in large-scale sampling censuses were asked to submit proposals, and a survey contract was made with Crossley, S-D Surveys, Inc., of New York.

Several months were spent in working out procedures to ensure an accurate and comprehensive count. The national survey was carried out during the months of January and February 1956, collecting data on sport fishing and hunting for the calendar year 1955. In every State, interviewers ascertained whether persons had fished or hunted in 1955 and recorded detailed information about their fishing and hunting activities.

WHAT THE SURVEY MEASURED

The amount of money spent by fishermen and hunters is an indication of the value they place on their sports. Since it represents revenue to a variety of businesses serving the sportsmen, this expenditure is an indication of the business value of fishing and hunting. It falls far short, however, of showing all the values of these sports. There are intangibles beyond the grasp of statistics. The enjoyment, the satisfaction, the recreation of a fishing or hunting trip cannot be expressed in dollars. Only to the extent that the money a person spends for a particular form of recreation can suggest the value he places on that recreation, this survey has measured the value of fishing and hunting to the sportsman. And in showing the amount and nature of his expenditures, the survey indicates some of the value of these sports in the general economy.

The survey recorded specific items concerning fishing and hunting activities. It did not inquire into attitudes or other intangibles. Popularity of fishing and hunting was measured only as shown by actual participation. If someone would have liked to go fishing in 1955, but did not, he was not included in this survey.

Since continuation of fishing and hunting depends upon the conservation of the resources on which these recreations depend, the economic benefits from fishing and hunting activities are a partial indication of the value of fish and wildlife conservation. Many others besides these sportsmen also enjoy the country's fish and wildlife resources. They, like the sportsmen, spend time and money in connection with their recreation. But unless they fished or hunted in 1955, they were not included in this survey.

Thus, the survey was limited strictly to measuring the extent of sport-fishing and hunting activities in 1955 and the effect of those activities on the general economy.

HOW THE SURVEY WAS MADE

A personal-interview survey was selected as the best method for obtaining the detailed information desired. It consisted of interviews with hunters and fishermen in a cross section of households throughout the United States. Houses, rather than individuals, were chosen for the initial contact since answers were desired from persons not requiring hunting and fishing licenses as well as from license holders, who might have been contacted directly. The sample of households was selected by scientific sampling methods so as to be representative of the United States as a whole.

Selection of samples of households began with the 1950 census of population. On the basis of that census, a large number of sample areas were selected. Interviewers personally surveyed each area and determined the increase in the number of households from 1950 to 1955. Thus, the survey was self-adjusting for increases in households and population since 1950. By this self-adjusting feature the survey showed a total of 48,389,000 households in 1955, containing 118,366,000 persons 12 years old and older.

Calls on a specified proportion of the households in each sample area established the presence of eligible hunters or fishermen. To be eligible for interview a person had to be 12 years of age or older and to have hunted or fished at least once during the calendar year 1955.

Each of the 48 States was included in the sample. Interviews were conducted by some 300 interviewers in more than 250 places including more than a thousand cluster groupings. Calls on approximately 20,000 homes yielded 6,220 interviews with fishermen and 3,108 interviews with hunters. The findings of these interviews were then projected, by standard statistical procedures, to the whole population.

The survey covered—

- Sport-fishing and hunting activities.
- Persons 12 years of age and over.
- The calendar year 1955.

The survey indicated that in 1955—

- The total number of households in the United States was **48,389,000**.
- The total number of persons 12 years old and older was **118,366,000**.

This report shows—

- The number of households in which one or more persons fished or hunted.
- The number of persons who fished or hunted.
- How much these persons spent on fishing and hunting.
- How far they traveled to fish or hunt.
- How many days of fishing and hunting they enjoyed.

The information on fishing and hunting activities is based on personal interviews and is subject to the limitations of respondents' memory.

All figures represent projections from the sample and are subject to standard sampling limitations.

The results with respect to numbers of fishermen and hunters in the nation are considered accurate within 5 percent. For expenditures and regional figures, the potential statistical variation may be greater.

1 IN EVERY 3
17 MILLION households in the U.S. in 1955
had one or more
fishermen or hunters



1 in 6
BIG CITIES

1 in 3
SMALL CITIES

1 in 3
TOWNS

1 in 2
RURAL AREAS

Of the 118,366,000 persons 12 years of age and over in the United States in 1955, close to 8 million enjoyed **both** fishing and hunting.

When these “boths” are included in the total for each group—

18 percent went fishing.

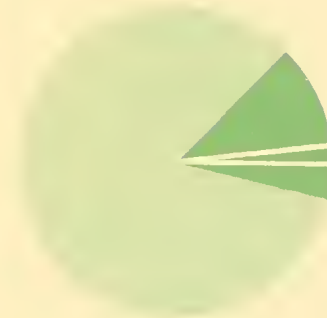
10 percent went hunting.

20,813,000 persons fished.

11,784,000 persons hunted.

1 IN EVERY **5**
25 MILLION
fished
or
hunted
in 1955

persons age 12 and over



fished 11%
hunted 3%
both 7%

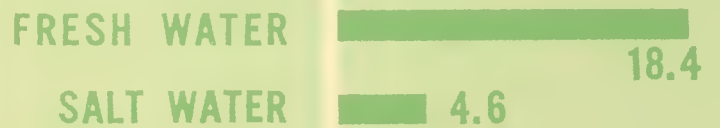
total 21%



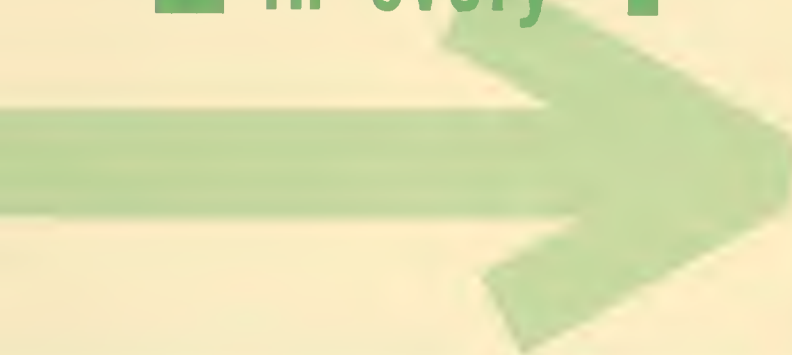
MILLIONS
WHO
HUNTED



FISHED



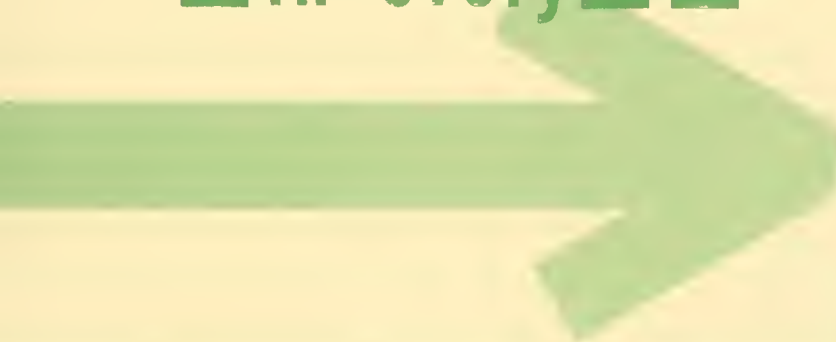
1 in every **4**



12,938,000

MEN FISHED

1 in every **11**



4,689,000

WOMEN FISHED

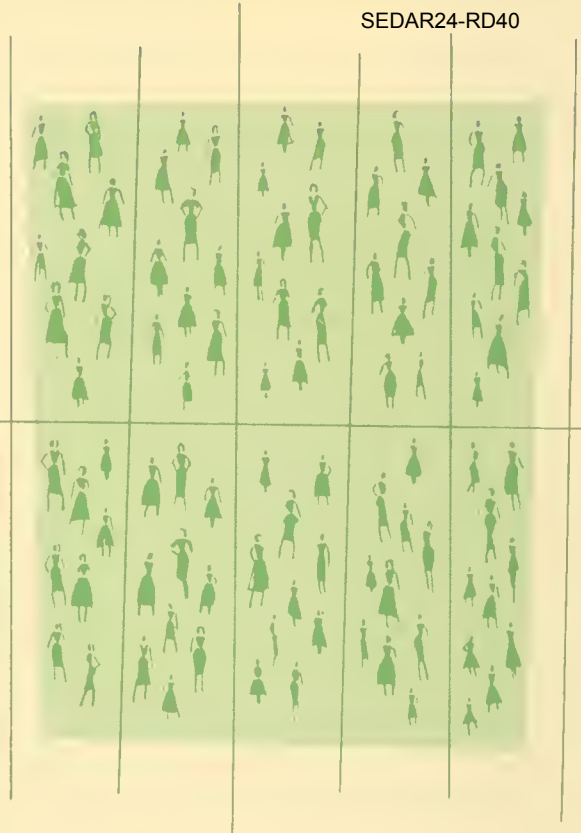
1 in every **5**



9,675,000

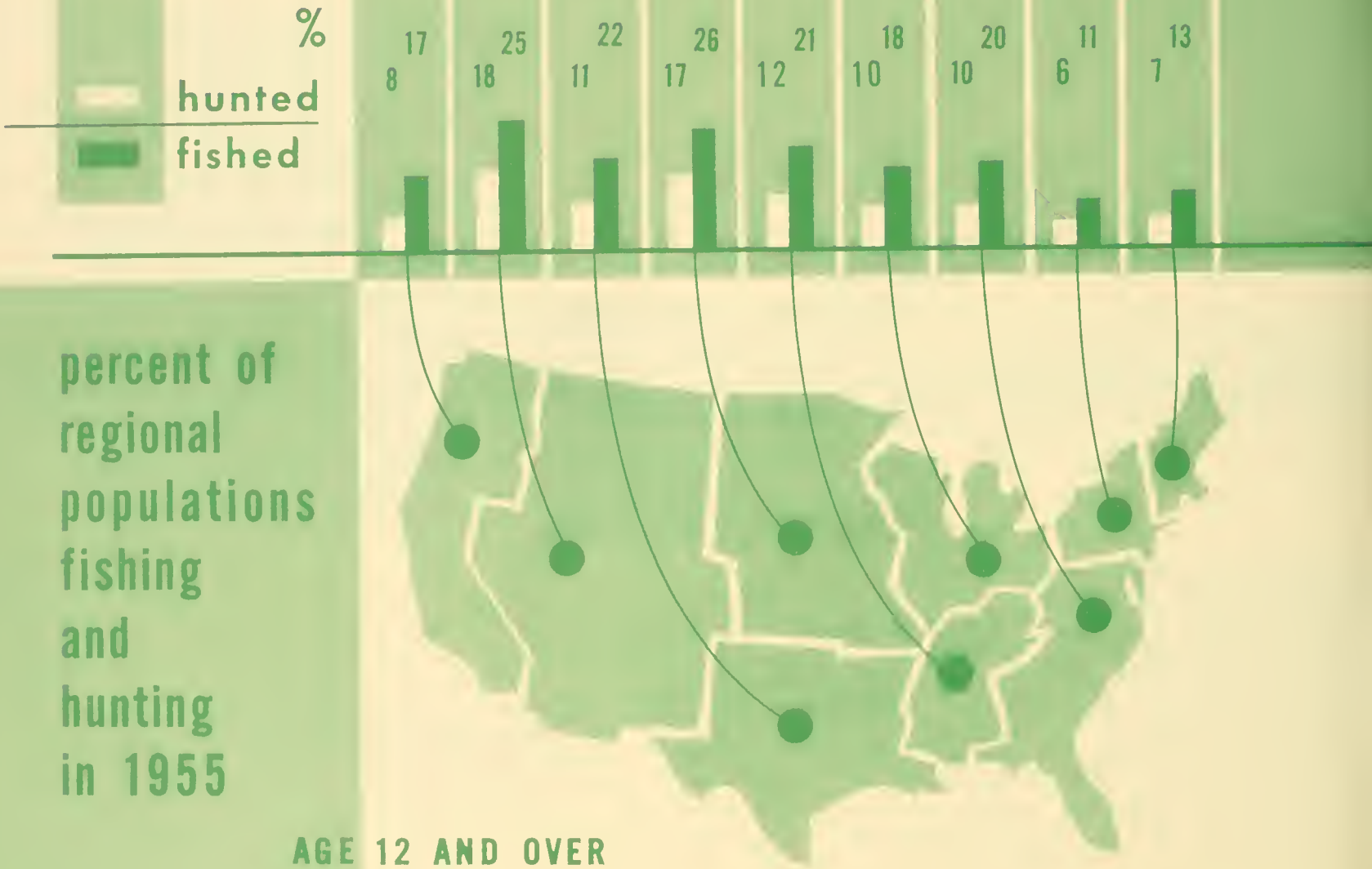
MEN HUNTED

1 in every **128**

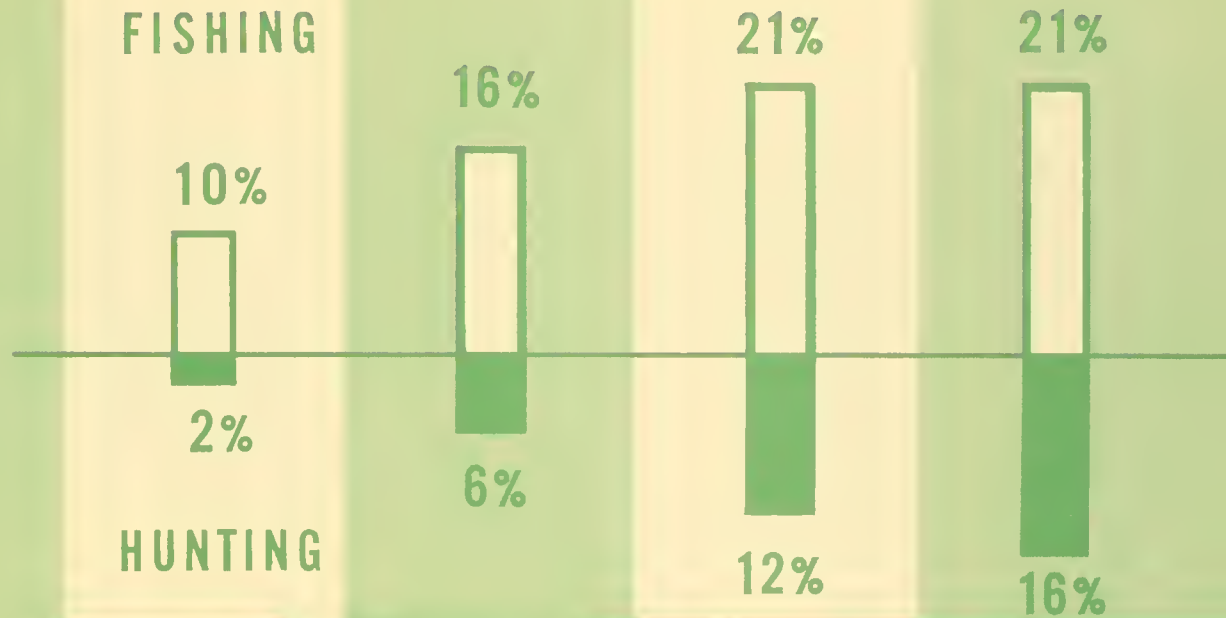


418,000

WOMEN HUNTED



variation in percent fishing & hunting in 1955



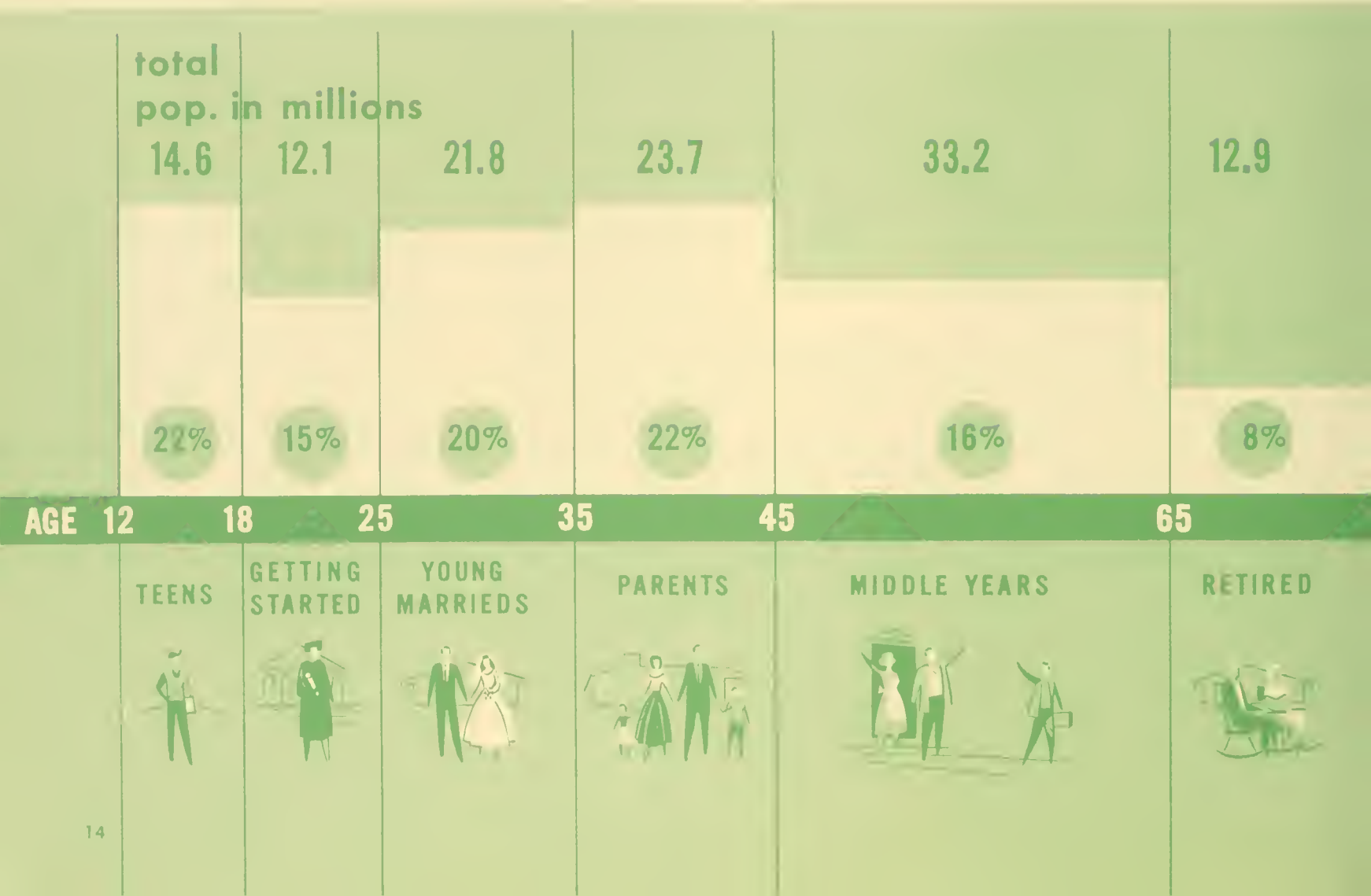
BY
POPULATION
DENSITY
GROUPING

AGE 12
AND OVER

BIG CITIES **SMALL CITIES** **TOWNS** **RURAL AREAS**



percent who fished BY AGE GROUPS -1955



percent who hunted BY AGE GROUPS -1955



25 million people spend a lot of money on fishing and hunting. They spend it for fishing tackle and hunting equipment, for camping gear and special clothing, for automobile expense and food and lodging on their fishing and hunting trips, for dogs, for boats and motors, and for various kinds of fishing and hunting licenses.

3 billion dollars (\$2,850,979,000) for fishing and hunting in 1955



1 billion
dollars

(\$ 936,687,000)

for
HUNTING

in 1955

IN MILLIONS OF DOLLARS

TRIP
\$251

MISCEL.
\$150

LICENSES
\$47

EQUIPMENT
\$489



2 billion
dollars

(\$1,914,292,000)

for
FISHING

in 1955

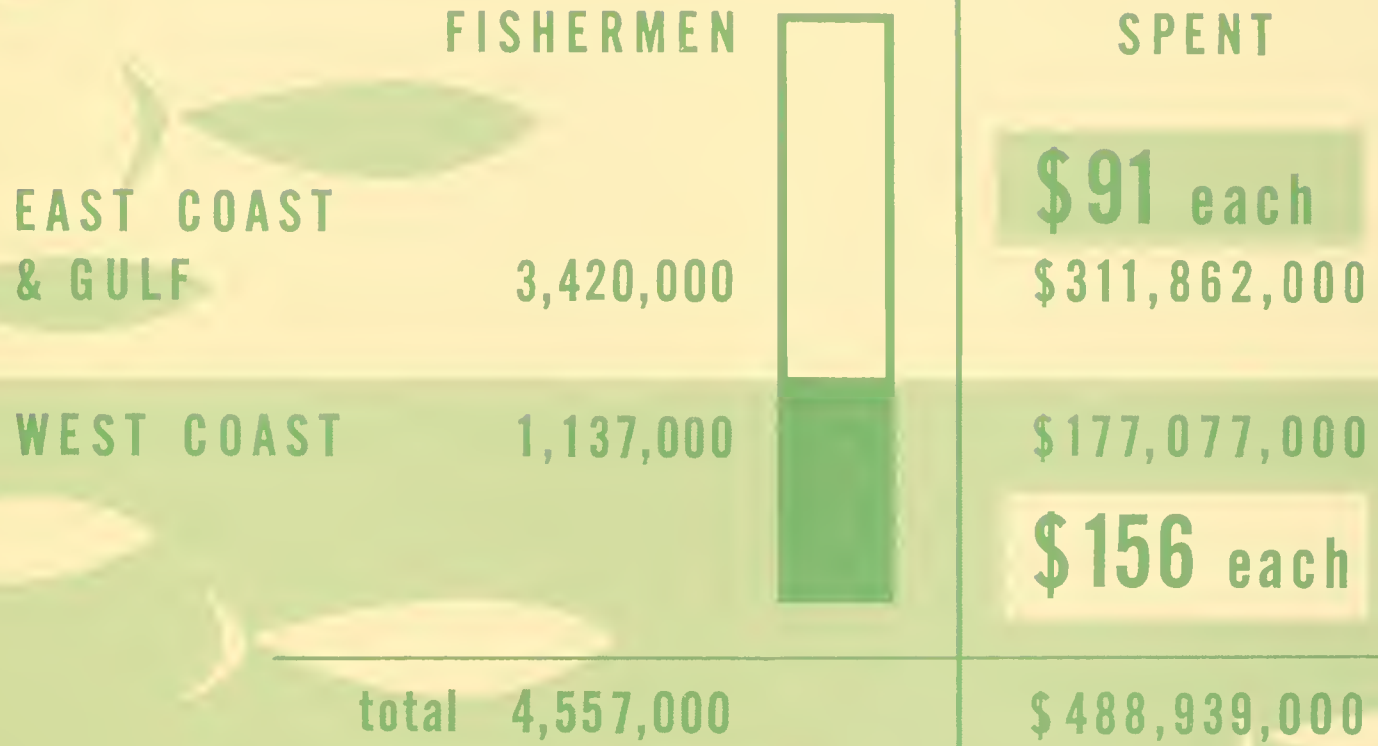
TRIP \$1,048
MISCEL. \$35
LICENSES \$38
EQUIPMENT \$793

IN MILLIONS OF DOLLARS



This is the first time that good information has been available on the extent and importance of salt-water fishing in the United States. In most of the coastal States, licenses are not required for salt-water fishing, so we have not had even the license-sale figures to suggest how many people enjoy fishing along the Nation's coastline.

salt-water fishing 1955



The figures in the facing chart are car-miles, not passenger-miles. Automobile travel for different kinds of hunting and fishing included—

	Car-miles	Passenger-miles
Hunting		
Big game	906,829,000	2,222,373,000
Small game	1,433,771,000	3,094,974,000
Waterfowl	344,314,000	754,949,000
Total	2,684,914,000	6,072,296,000
Fishing:		
Fresh water	6,542,829,000	15,006,433,000
Salt water	1,223,657,000	2,904,001,000
Total	7,766,486,000	17,910,434,000
Total, hunting and fishing	10,451,400,000	23,982,730,000

The charts on pages 24 and 25 show the distribution of the hunters and fishermen according to the distances they traveled by all kinds of transportation to pursue their sport.



10.4 billion miles by automobile

HUNTING
2.7

SMALL
GAME

1.4

BIG
GAME

1.0

WATER-
FOWL

0.3

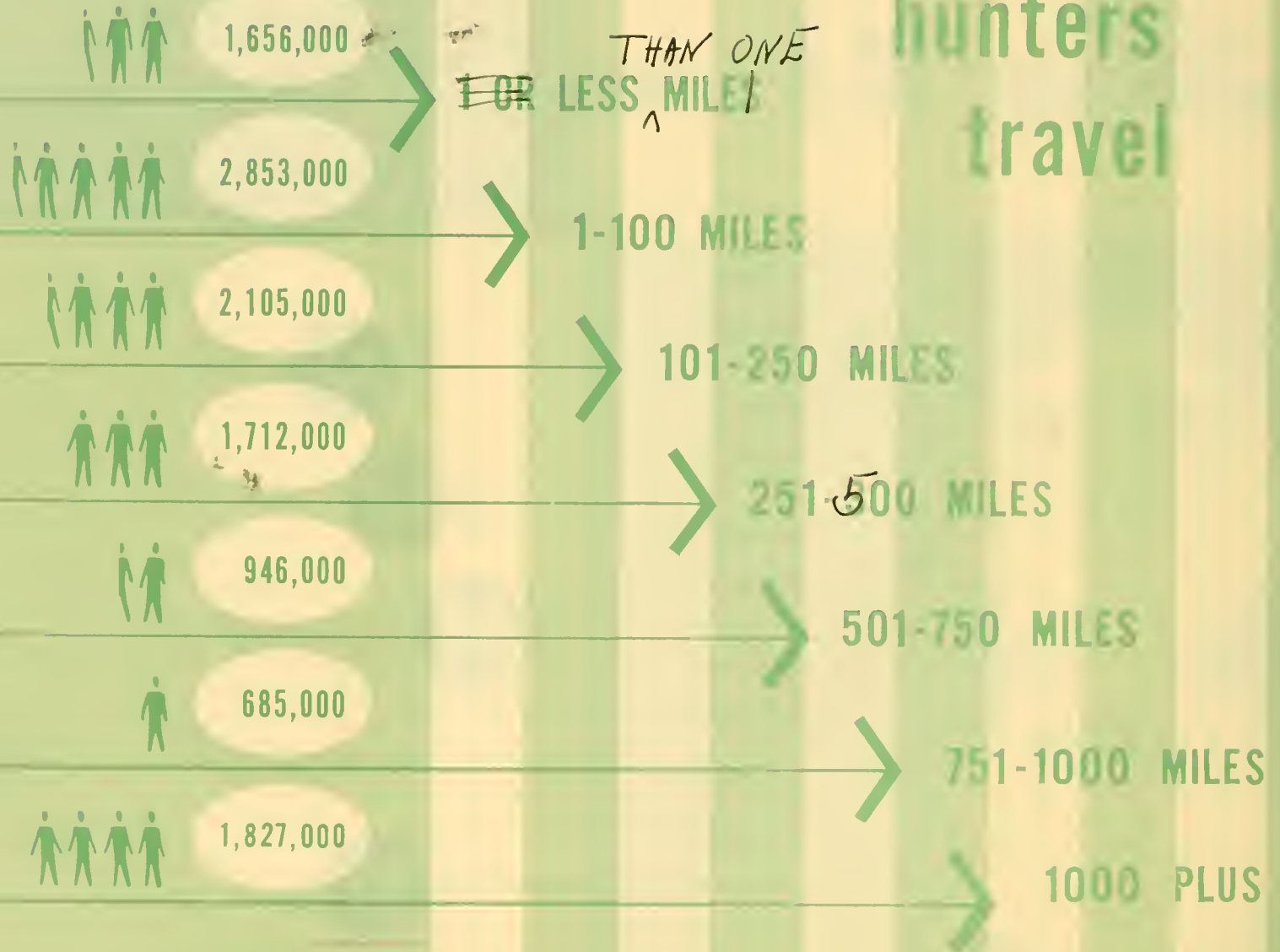
FRESH
WATER

FISHING
7.7

SALT
WATER

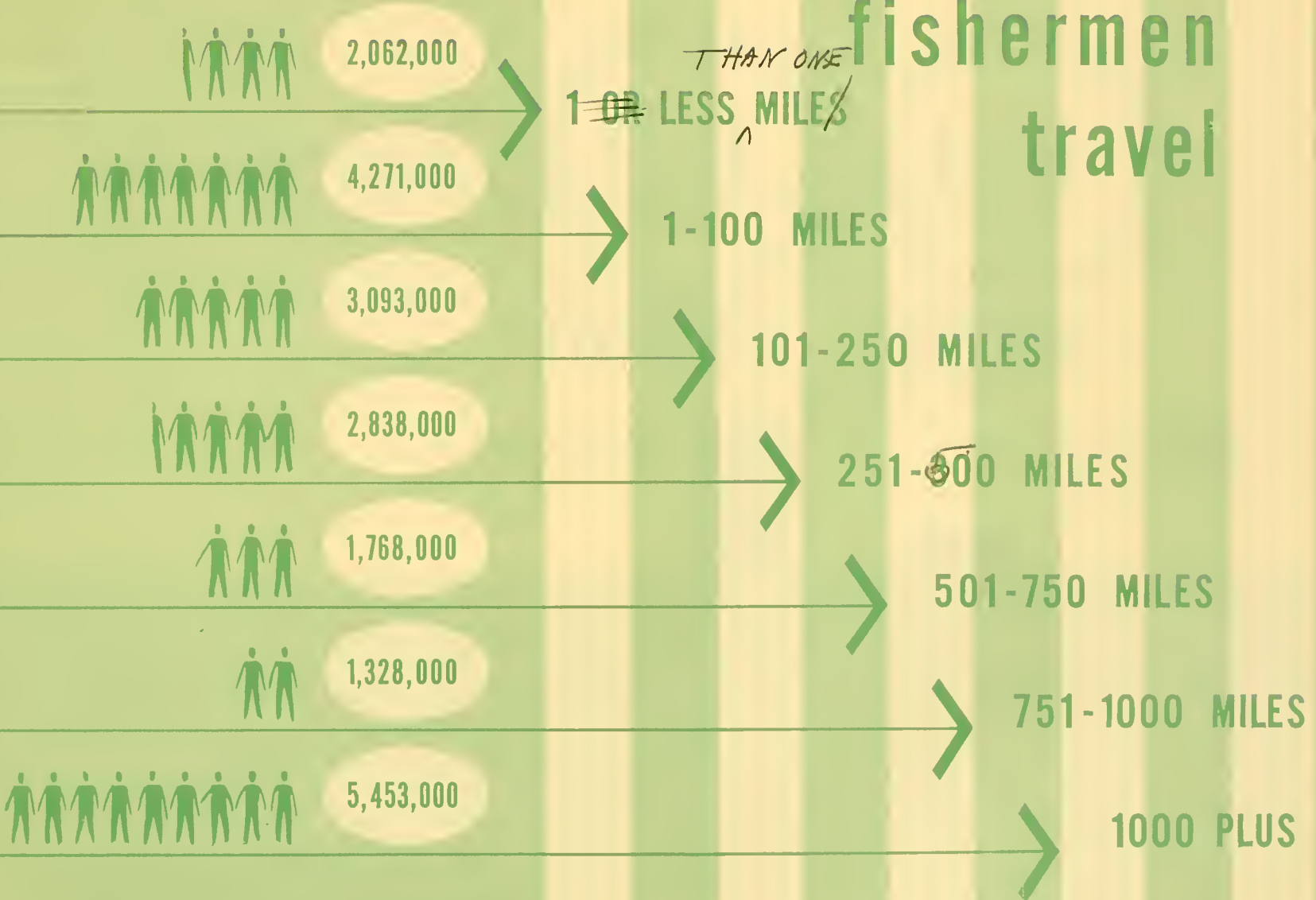
6.5

1.2



hunters travel

fishermen travel



Many fishermen and hunters were not required to have licenses.

In most of the coastal States, salt-water fishing did not require a license in 1955.

In many States, persons under 16, or persons over 65, or women, or servicemen, or veterans, or persons fishing or hunting on their own property, did not need licenses.

The survey report on licenses purchased and the annual reports of license sales are discussed on page 45.

not licensed



FISHERMEN



HUNTERS

7,076,000

1,833,000

licensed

13,737,000

9,951,000



in 1955
the typical



hunter



& fisherman

SPENT

\$ 177.00

\$79.49

FISHED & HUNTED

8½ DAYS

9½ DAYS

TOOK

5½ TRIPS

8 TRIPS

DROVE

206 MILES

319 MILE

Correction and supplement sheet for— **NATIONAL SURVEY OF
FISHING AND HUNTING**

(Insert at page 28.)

(Circular 44)

In the chart on page 28, the expenditure figures were transposed in printing. Further, those expenditure figures are average (mean) values, while the other figures in the chart are median values. Inasmuch as there is need, in considering the economic aspects of fishing and hunting, for both the means and the medians for all the items concerned, the table on the reverse of this sheet should be substituted for the chart.

Corrections should be made in Circular 44 as follows: On pages 24 and 25, the first mileage block in each table should read "LESS THAN 1 MILE," and the fourth mileage block should read "251-500 MILES." On page 49, the table captions were transposed; the first table relates to number of fishermen and hunters, and the second table relates to expenditures.

IN 1955

U. S. TOTAL

MEAN

MEDIAN



20,813,000 FISHERMEN:

Money expended . . .	\$1,914,292,000	\$91.98	\$29.75
Man-days	397,447,000	19.1	9.5
Trips taken	341,333,000	16.4	8
Miles by automobile .	17,910,434,000	860.5	319



11,784,000 HUNTERS:

Money expended . . .	\$936,687,000	\$79.49	\$27.30
Man-days	169,423,000	14.4	8.5
Trips taken	154,370,000	13.1	5.5
Miles by automobile .	6,072,296,000	515.3	206

over half a billion days of recreation

1955

397,447,000

FISHING

FRESH
WATER
338,826,000

SALT
WATER
58,621,000

HUNTING

169,423,000

SMALL
GAME
118,630,000

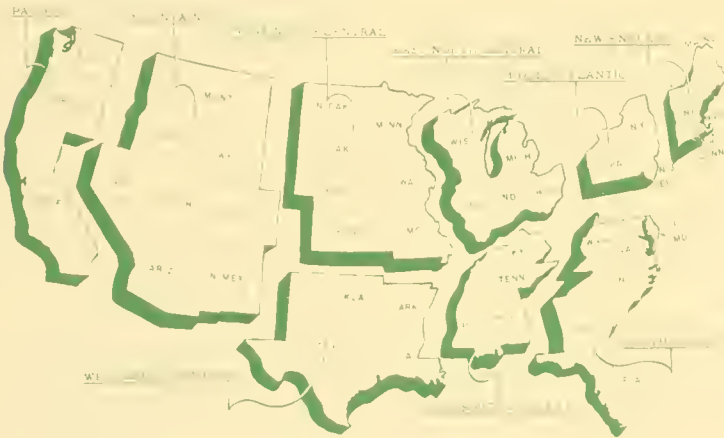
BIG
GAME
30,834,000

WATER-
FOWL
19,959,000

NUMBER OF HOUSEHOLDS

The figures shown in the tables are the projections of the results of interviews in sample areas in all of the 48 States, providing a cross section of the United States. The figures are given in projected terms of total population in 1955 (rather than only in percentages of the sample). Initial contacts were with individual households. In each selected household, each person who had fished or hunted in 1955 was interviewed at length. The primary purpose was to obtain information for the country as a whole, but since certain population groupings were used in carrying out the survey, it is possible to give figures for these groupings.

The geographical sections are the standard divisions used by the Bureau of the Census for population statistics. They are indicated on the map below.



The population-density groupings are based on Census Bureau classifications as set out in the 1950 census. They are as follows:

a. **BIG CITIES.**—All central cities with populations of 500,000 or more within the city limits. In the original survey tabulation, these were designated as “large metropolitan centers.”

b. **SMALL CITIES, AND SUBURBS.**—The suburbs of the cities in *a*, and all other cities and their suburbs in areas defined in the 1950 census as urbanized (thickly populated). In the original survey tabulation, these were designated as “suburbs and small metropolitan centers.”

c. **TOWNS.**—All urban places (outside urbanized areas included under *a* and *b*) with populations of 2,500 or more. In the original survey tabulation, these were designated as “small cities.”

d. **RURAL AREAS.**—All rural places with populations of less than 2,500 and all open country. In the original survey tabulation, these were designated as “rural territory.”

It should be noted that the percentages in this households table (like those in following tables on number of fishermen and hunters) are percentages of the total number in the United States or in the region or population-density grouping (col. 1). For example, as shown in column 2 of the opposite table, 34.8 percent of all the households in the United States had at least one person who fished, or hunted, or fished *and* hunted during 1955. It should be kept in mind also that the “Total households with fishermen” (col. 5) and the “Total households with hunters” (col. 7) both include the households in which one or more persons fished *and* hunted (col. 3); consequently the sum of columns 5 and 7 exceeds the total in column 2.

NUMBER OF HOUSEHOLDS WITH PERSONS 12 YEARS OLD AND OLDER WHO FISHED, OR HUNTED, OR FISHED AND HUNTED IN 1955

[In thousands. Percentages are percentages of totals in column 1]

Grouping	Column 1		Column 2		Column 3		Column 4		Column 5		Column 6		Column 7		
	Total number of households in U. S.	Number	Percent	Total households with fishermen and/or hunters	Number	Percent	Households with fishermen and hunters	Number	Percent	Total households with fishermen (col. 3 plus col. 4).	Number	Percent	Households with hunters only	Number	Percent
WEIGHTED UNITED STATES TOTAL	48,389	16,848	34.8	6,712	13.9	7,217	14.9	13,929	28.8	2,919	6.0	9,631	19.9		
CENSUS GEOGRAPHIC SECTIONS:															
New England	3,125	839	26.9	321	10.3	387	12.4	708	22.7	131	4.2	452	14.5		
Middle Atlantic	10,120	2,540	25.1	749	7.4	1,271	12.6	2,020	20.0	520	5.1	1,269	12.5		
East North Central	10,656	3,725	35.0	1,511	14.2	1,538	14.4	3,049	28.6	676	6.4	2,187	20.5		
West North Central	3,790	1,841	48.6	876	23.1	630	16.6	1,506	39.7	335	8.9	1,211	32.0		
South Atlantic	5,545	2,223	40.1	892	16.1	1,001	18.1	1,893	34.1	330	5.9	1,222	22.0		
East South Central	3,043	1,296	42.6	643	21.1	456	15.0	1,099	36.1	197	6.5	840	27.6		
West South Central	4,250	1,644	38.7	676	15.9	709	16.7	1,385	32.6	259	6.1	935	22.0		
Mountain	1,871	866	46.3	427	22.8	282	15.1	709	37.9	157	8.4	584	31.2		
Pacific	5,989	1,874	31.3	617	10.3	943	15.8	1,560	26.0	314	5.2	931	15.5		
POPULATION-DENSITY GROUPINGS:															
Big cities	9,003	1,558	17.3	301	3.3	1,113	12.4	1,414	15.7	144	1.6	445	4.9		
Small cities, and suburbs	14,351	4,116	28.7	1,252	8.7	2,398	16.7	3,650	25.4	466	3.3	1,718	12.0		
Towns	8,995	3,526	39.2	1,631	18.1	1,341	14.9	2,972	33.0	554	6.2	2,185	24.3		
Rural areas	16,037	7,648	47.7	3,528	22.0	2,365	14.8	5,893	36.7	1,755	10.9	5,283	32.9		

NUMBER OF PERSONS WHO FISHED AND HUNTED

SEDAR24-RD40

The table opposite shows the number of persons who fished, or hunted, or fished *and* hunted, as projected from the cross-section sampling of the United States.

The Census geographic sections have been explained on page 30. The proportion of the population (12 years of age and over) that fished and hunted varied considerably among these geographic sections, as shown by the maps pictured here.

These regional percentages are from columns 5 and 7 of the table opposite. It should be kept in mind that the "Total who fished" (col. 5) and the "Total who hunted" (col. 7) both include the figures for persons who fished *and* hunted (col. 3); consequently the sum of columns 5 and 7 exceeds the total in column 2.

Under "Adults, by sex" are shown separate tabulations for men and for women, 18 years of age and over.

Separate tabulations were made for significant age divisions of the population. The age groups are as follows:

12-17 years. Teen-agers or older children

18-24 years. The getting started age—young adults, pre-marriage and early marriage, college students, and job starters.

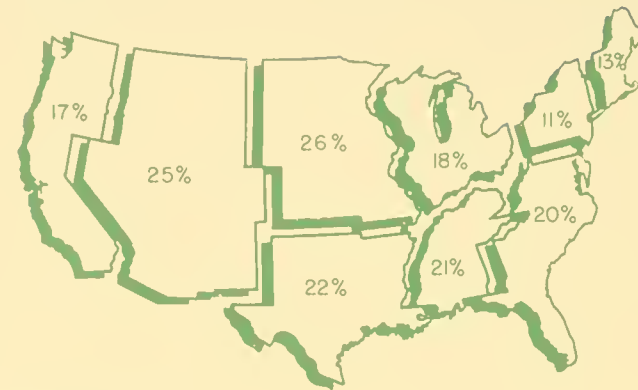
25-34 years. Young married people, the beginning of accumulation, early parenthood.

35-44 years. Parents of older children, establishment of economic status.

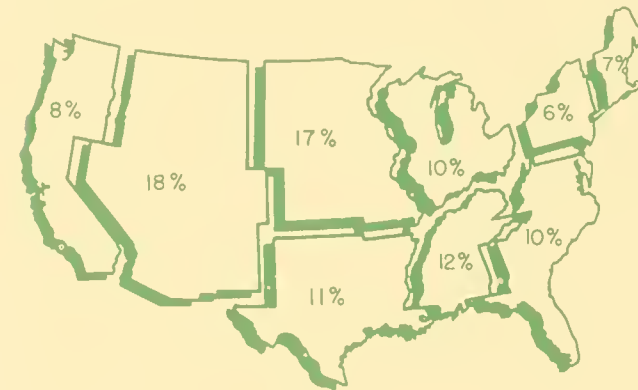
45-64 years. Parents of marrying and married children, stabilization of economic status.

65 years and over. Retirement age.

FISHING



HUNTING



NUMBER OF PERSONS 12 YEARS OLD AND OLDER WHO FISHED, OR HUNTED, OR FISHED AND HUNTED IN 1955

[In thousands—Percentages are percentages of totals in column 1]

Grouping	Column 1		Column 2		Column 3		Column 4		Column 5		Column 6		Column 7	
	Total number of persons 12 and over in U. S.		Total persons who fished and/or hunted		Persons who fished and hunted		Persons who fished only		Total persons who fished (col. 3 plus col. 4)		Persons who hunted only		Total persons who hunted (col. 3 plus col. 6)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
WEIGHTED UNITED STATES TOTAL	118,366		24,917	21.1	7,680	6.5	13,133	11.1	20,813	17.6	4,104	3.5	11,784	10.0
CENSUS GEOGRAPHIC SECTIONS:														
New England	7,919		1,224	15.4	367	4.6	635	8.0	1,002	12.7	222	2.8	589	7.4
Middle Atlantic	24,869		3,539	14.2	880	3.5	1,931	7.8	2,811	11.3	728	2.9	1,608	6.5
East North Central	25,733		5,489	21.3	1,632	6.3	2,951	11.5	4,583	17.8	906	3.5	2,538	9.9
West North Central	9,201		2,913	31.7	967	10.5	1,379	15.0	2,346	25.5	567	6.2	1,534	16.7
South Atlantic	14,336		3,223	22.5	1,031	7.2	1,774	12.4	2,805	19.6	418	2.9	1,449	10.1
East South Central	7,959		1,963	24.7	691	8.7	974	12.2	1,665	20.9	298	3.8	989	12.4
West South Central	10,250		2,560	25.0	842	8.2	1,395	13.6	2,237	21.8	323	3.2	1,165	11.4
Mountain	4,529		1,369	30.2	539	11.9	573	12.6	1,112	24.6	257	5.7	796	17.6
Pacific	13,570		2,637	19.4	731	5.4	1,521	11.2	2,252	16.6	385	2.8	1,116	8.2
POPULATION-DENSITY GROUPING:														
Big cities	21,010		2,169	10.3	325	1.5	1,677	8.0	2,002	9.5	167	.8	492	2.3
Small cities, and suburbs	34,263		6,001	17.5	1,427	4.2	3,986	11.6	5,413	15.8	588	1.7	2,015	5.9
Towns	21,729		5,337	24.5	1,901	8.7	2,649	12.2	4,550	20.9	787	3.6	2,688	12.4
Rural areas	41,364		11,410	27.6	1,027	9.7	4,821	11.7	8,848	21.4	2,562	6.2	6,589	15.9
ADULTS (18 AND OVER) BY SEX:														
Men	50,082		16,293	32.5	6,320	12.6	6,618	13.2	12,938	25.8	1,355	6.7	9,675	19.3
Women	53,705		4,836	9.0	271	.5	4,418	8.2	4,689	8.7	147	.3	418	.8
AGE GROUPS:														
12-17 years	14,579		3,788	26.0	1,089	7.5	2,097	14.4	3,186	21.9	602	4.1	1,691	11.6
18-24 years	12,130		2,517	20.8	892	7.4	913	7.5	1,805	14.9	712	5.9	1,604	13.2
25-34 years	21,790		5,104	23.4	1,912	8.8	2,382	10.9	4,294	19.7	810	3.7	2,722	12.5
35-44 years	23,730		5,978	25.2	1,873	7.9	3,304	13.9	5,177	21.8	801	3.4	2,674	11.3
45-64 years	33,220		6,272	18.9	1,667	5.0	3,592	10.8	5,259	15.8	1,013	3.1	2,680	8.1
65 years and over	12,917		1,258	9.7	247	1.9	845	6.5	1,092	8.5	166	1.3	413	3.2

FRESH-WATER AND SALT-WATER FISHERMEN AND BIG-GAME, SMALL-GAME, AND WATERFOWL HUNTERS

The tables opposite show fishing and hunting in 1955 according to particular classifications.

The age groups have been explained on page 32.

FISHERMEN

In the survey, each person who stated that he had fished in 1955 was asked questions separately about fresh-water fishing and about salt-water fishing. The following definitions of fresh-water and salt-water fishing were used:

Fresh-water fishing. All fishing in inland streams, lakes, ponds, or reservoirs, and all fishing in coastal streams above the tide limits.

Salt-water fishing.—All fishing in the ocean, in coastal bays and estuaries, and in coastal streams below the tide limits.

Of the salt-water fishermen, the number who fished on the Atlantic and Gulf coasts and the number who fished on the Pacific coast were as follows (note that the percentages here are the percentages of the salt-water fishermen):

Fished on	Number	Percent
Atlantic and Gulf coasts	3,420,000	75
Pacific coast	1,137,000	25
Total	4,557,000	100

Many fishermen fished both in fresh water and in salt water. Consequently, in the fishermen table, the sum of the number of fresh-water fishermen (col. 3) and the number of salt-water

fishermen (col. 4) exceeds the total number of fishermen (col. 2).

It should be noted that the percentages in columns 2, 3, and 4 of the fishermen table are percentages of the total number of persons 12 years of age and over as shown in column 1.

HUNTERS

Each person who stated that he had hunted in 1955 was asked questions separately about big-game hunting, small-game hunting, and waterfowl hunting. The following lists were used as indications of the kind of hunting meant:

Big game.—Antelope, bear, deer, elk, javelina (peccary), moose, mountain goat, mountain sheep, wild boar, wild turkey.

Small game.—Fox, opossum, rabbit, raccoon, squirrel, dove, grouse, partridge, pheasant, pigeon, prairie chicken, quail, rail, snipe, woodcock.

Waterfowl.—Coot, duck, gallinule (marsh hen), goose.

Many hunters hunted more than one kind of game. Consequently, in the hunters table, the sum of the number of big-game hunters (col. 3), the number of small-game hunters (col. 4), and the number of waterfowl hunters (col. 5) exceeds the total number of hunters (col. 2).

The percentages in columns 2, 3, 4, and 5 of the hunters table are percentages of the total number of persons 12 years of age and over as shown in column 1.

NUMBER OF PERSONS WHO FISHED IN FRESH WATER AND IN SALT WATER

SEDAR24-RD40

[Percentages are percentages of totals in column 1]

Grouping	Column 1	Column 2		Column 3		Column 4	
	Total number of persons 12 and over in U. S.	Total persons who fished		Fished in fresh water		Fished in salt water	
		Number	Percent	Number	Percent	Number	Percent
WEIGHTED UNITED STATES TOTAL	118,366,000	20,813,000	17.6	18,420,000	15.6	4,557,000	3.8
ADULTS (18 AND OVER) BY SEX:							
Men	50,082,000	12,938,000	25.8	11,405,000	22.8	3,047,000	6.1
Women	53,705,000	4,689,000	8.7	4,097,000	7.6	943,000	1.8
AGE GROUPS:							
12-17 years	14,579,000	3,486,000	21.9	2,918,000	20.0	567,000	3.9
18-24 years	12,130,000	1,805,000	14.9	1,629,000	13.4	341,000	2.8
25-34 years	21,790,000	4,294,000	19.7	3,871,000	17.8	857,000	3.9
35-44 years	23,730,000	5,177,000	21.8	4,516,000	19.0	1,342,000	5.7
45-64 years	33,220,000	5,259,000	15.8	4,519,000	13.6	1,271,000	3.8
65 years and over	12,917,000	1,092,000	8.4	967,000	7.5	179,000	1.4

NUMBER OF PERSONS WHO HUNTED BIG GAME, SMALL GAME, AND WATERFOWL

[Percentages are percentages of totals in column 1]

Grouping	Column 1	Column 2		Column 3		Column 4		Column 5	
	Total number of persons 12 and over in U. S.	Total persons who hunted		Hunted big game		Hunted small game		Hunted waterfowl	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
WEIGHTED UNITED STATES TOTAL	118,366,000	11,784,000	10.0	4,414,000	3.7	9,822,000	8.3	1,986,000	1.7
ADULTS (18 AND OVER) BY SEX:									
Men	50,082,000	9,675,000	49.3	3,734,000	7.5	8,039,000	16.1	1,678,000	3.4
Women	53,705,000	418,000	.8	202,000	.4	267,000	.5	36,000	.1
AGE GROUPS:									
12-17 years	14,579,000	1,691,000	11.6	478,000	3.3	1,516,000	10.4	272,000	1.9
18-24 years	12,130,000	1,604,000	13.3	580,000	4.8	1,409,000	11.6	299,000	2.5
25-34 years	21,790,000	2,722,000	12.5	1,079,000	5.0	2,191,000	10.1	581,000	2.7
35-44 years	23,730,000	2,674,000	11.3	1,137,000	4.8	2,179,000	9.2	494,000	1.7
45-64 years	33,220,000	2,680,000	8.1	1,047,000	3.2	2,184,000	6.6	394,000	1.2
65 years and over	12,917,000	413,000	3.2	93,000	.7	340,000	2.6	36,000	.3

FISHING AND HUNTING TRIPS, MAN-DAYS, AND MEMBERSHIP IN CLUBS SEDAR24-RD40

The tables opposite, and those below, show some of the details about fishing and hunting trips in 1955.

NUMBER OF PERSONS WHO TOOK SPECIFIED NUMBERS OF FISHING OR HUNTING TRIPS IN 1955

Each fisherman or hunter interviewed was asked to state the number of times he went fishing or hunting in 1955. Based on the replies given, the projected distribution of all fishermen and hunters in the United States, according to the number of separate trips, is shown in the table opposite.

NUMBER OF PERSONS WHO TRAVELED SPECIFIED DISTANCES ON FISHING OR HUNTING TRIPS IN 1955

Each person interviewed was asked the distance he traveled on his fishing or hunting trips. From the replies, the projected distribution of all fishermen and hunters in the United States, according to the total distance each traveled for fishing or hunting in 1955, is shown in the table opposite.

PERSONS WHO TOOK FISHING OR HUNTING TRIPS LASTING MORE THAN 1 DAY

Each person interviewed was asked how many days he fished or hunted on each trip (a fishing day or hunting day thus being defined as any day or part of a day on which he fished or hunted). From the replies, the projected numbers of fishermen and hunters in the United States and in various groupings, who took trips of more than one day, are shown in the table opposite. The percentages in this table are of the total number of persons 12 years of age and over as shown in column 1.

MAN-DAYS OF FISHING AND HUNTING

As projected from replies to interviews, the total number of days spent in 1955 in the different types of fishing and hunting in the United States aggregate as follows:

Fishing:	<i>Man-days</i>
Fresh water	338, 826, 000
Salt water	58, 621, 000
Total	397, 447, 000
Hunting:	
Big game	30, 834, 000
Small game	118, 630, 000
Waterfowl	19, 959, 000
Total	169, 423, 000
Total fishing and hunting	566, 870, 000

The total number of man-days of fishing (397,447,000) divided by the total number of fishermen (20,813,000) gives an average of 19 days per fisherman, but this average is unduly influenced by a small number of fishermen who fished a very large number of days. The typical fisherman fished on 9½ days during the year (this is the median, that is, half the fishermen fished less than 9½ days and half fished more than 9½ days).

The typical hunter hunted on 8½ days in 1955.

MEMBERSHIP IN CLUBS

The persons interviewed were asked about membership in fishing or hunting clubs of any kind. The projected total for the United States is as follows:

Number who belonged to fishing and hunting clubs	1, 371, 000
Percent of all fishermen and hunters	5. 5
Percent of all persons 12 years of age and over	1. 2

NUMBER OF PERSONS WHO TOOK SPECIFIED NUMBERS OF FISHING OR HUNTING TRIPS IN 1955

	Persons who fished		Persons who hunted	
	Number	Per-cent	Number	Per-cent
WEIGHTED UNITED STATES TOTAL	20,813,000	100.0	11,784,000	100.0
Went fishing or hunting—				
Once	2,563,000	12.3	1,122,000	9.5
Twice	1,894,000	9.1	955,000	8.1
3 times	1,772,000	8.5	1,031,000	8.7
4 or 5 times	2,161,000	10.4	1,728,000	14.7
6 to 10 times	3,732,000	17.9	2,470,000	21.0
11 to 15 times	2,600,000	12.5	1,475,000	12.5
16 to 25 times	2,425,000	11.7	1,483,000	12.6
26 to 50 times	2,169,000	10.4	1,118,000	9.5
51 times and over	1,497,000	7.2	402,000	3.4

NUMBER OF PERSONS WHO TRAVELED SPECIFIED DISTANCES ON FISHING OR HUNTING TRIPS IN 1955

	Persons who fished		Persons who hunted	
	Number	Per-cent	Number	Per-cent
WEIGHTED UNITED STATES TOTAL	20,813,000	100.0	11,784,000	100.0
Reported traveling				
No miles	2,062,000	9.9	1,656,000	14.1
100 miles or less	4,271,000	20.5	2,853,000	24.2
101-250 miles	3,093,000	14.9	2,105,000	17.9
251-500 miles	2,838,000	13.6	1,712,000	14.5
501-750 miles	1,768,000	8.5	946,000	8.0
751-1,000 miles	1,328,000	6.4	685,000	5.8
1,001-2,000 miles	2,966,000	14.3	1,172,000	10.0
2,001-3,000 miles	1,165,000	5.6	369,000	3.1
3,001-5,000 miles	818,000	3.9	235,000	2.0
Over 5,000 miles	504,000	2.4	51,000	.4

PERSONS WHO TOOK FISHING OR HUNTING TRIPS LASTING MORE THAN 1 DAY

[Percentages are percentages of totals in column 1]

Grouping	Column 1	Column 2		Column 3	
	Total number of persons 12 and over in U. S.	Fished on trips lasting more than 1 day	Hunted on trips lasting more than 1 day	Number	Per-cent
WEIGHTED UNITED STATES TOTAL	118,366,000	6,584,000	5.6	2,145,000	2.1
CENSUS GEOGRAPHIC SECTIONS:					
New England	7,919,000	292,000	3.7	103,000	1.3
Middle Atlantic	24,869,000	687,000	2.8	367,000	1.5
East North Central	25,733,000	1,731,000	6.7	527,000	2.0
West North Central	9,201,000	763,000	8.3	226,000	2.5
South Atlantic	14,336,000	524,000	3.7	125,000	.9
East South Central	7,959,000	295,000	3.7	58,000	.7
West South Central	10,250,000	719,000	7.0	157,000	1.5
Mountain	4,529,000	515,000	1.1	205,000	.5
Pacific	13,570,000	1,058,900	7.8	677,000	5.0
POPULATION-DENSITY GROUPINGS:					
Big cities	21,010,000	645,000	3.1	206,000	1.0
Small cities, and suburbs	34,263,000	2,071,000	6.0	655,000	1.9
Towns	21,729,000	1,607,000	7.4	576,000	2.7
Rural areas	41,364,000	2,261,000	5.5	1,008,000	2.4
ADULTS (18 AND OVER) BY SEX:					
Men	50,082,000	4,339,000	8.7	2,110,000	4.2
Women	53,705,000	1,441,000	2.7	116,000	.2
By AGE GROUPS:					
12-17 years	14,579,000	804,000	5.5	219,000	1.5
18-24 years	12,130,000	500,000	4.1	305,000	2.5
25-34 years	21,790,000	1,338,000	6.1	631,000	2.9
35-44 years	23,730,000	1,899,000	8.0	698,000	2.9
45-64 years	33,220,000	1,783,000	5.4	544,000	1.6
65 years and over	12,917,000	260,000	2.0	48,000	.4

EXPENDITURES FOR FISHING AND HUNTING

SEDAR24-RD40

In the tables on the next six pages are shown the projections for the United States of expenditures for fishing and hunting in 1955. Fishermen and hunters interviewed were asked detailed questions about their expenditures in connection with their sport. Some had spent almost nothing, others had spent a great deal (one sportsman spent \$12,190). Expenditures were limited to those of the individual respondent, and except for those under 16 no person reported for anyone else. The several tables show the national figures for the different kinds of fishing and hunting, according to various classes of expenditures.

EQUIPMENT

Equipment expenditures included the cost and maintenance of equipment used specifically for fishing or hunting and of other equipment used *primarily* for fishing or hunting. Expenditures for purchase of equipment were included only if the equipment had been acquired by purchase or gift in the United States in the calendar year, primarily for fishing or hunting, and they were prorated among the types of fishing and hunting in which the sportsmen participated.

Fishing equipment included rods, poles, reels, lines, harness, nets, seines, minnow buckets, scales, ice-fishing gear, spear-fishing gear, and all other equipment used specifically for fishing.

Hunting equipment included guns and rifles, shells and cartridges, bows and arrows, gunsights, targets, decoys and calls, and all other equipment used specifically for hunting.

Other equipment (listed only if used primarily for fishing or hunting) included tents and sleeping gear, cooking and eating utensils, special fishing and hunting clothing, lanterns, binoculars, boats and boat accessories, motors, trailers, cabins, and other equipment if used *primarily* for fishing or hunting.

As projected from the cross-section sample, the total number of persons (12 years of age and over) who bought or received equipment used for fishing or hunting (equipment purchased in the United States in 1955) was as follows:

Number who bought or received equipment	18,068,000
Percent of all fishermen and hunters	72.5
Percent of all persons 12 years of age and over	15.3

TRIP EXPENDITURES

Trip expenditures were included only if the trip was made primarily for fishing or hunting, and in the case of a party trip they included only the expenditures of the person interviewed.

For meals purchased during fishing and hunting trips, only that portion of the meal cost in excess of the average cost of home meals was included (\$6.50 per person per week, U. S. Department of Agriculture, Household Economics Research Branch, September 1955).

Automobile transportation expense for fishing and hunting trips was computed at 3½ cents a mile to cover actual operating costs (gasoline, oil, maintenance, and tires) but not depreciation, insurance, or licenses (American Automobile Association Information Bulletin No. 93, March 1955). If four persons went together in an automobile, on a fishing trip, and one did not fish, the automobile expense applicable to each fisherman was the total divided by three, or 1½ cents a mile.

Other trip expenditures included transportation other than by automobile, refreshments, bait, guide fees, rentals, entrance fees, charter fees, and pack-trip fees.

If a trip was not made primarily for fishing or hunting, the transportation, lodging, food, and refreshment costs were excluded.

LICENSE AND LEASE FEES

In order to be recorded as a license holder in the survey, a person had to have purchased a fishing or hunting license during the calendar year 1955. Booklets describing the various licenses in each State were used as memory aids. If the initial interview in a household revealed that a certain member of the family had not fished during the year, that person was not interviewed as a

EXPENDITURES OF PERSONS WHO FISHED AND/OR HUNTED IN 1955

The total number of fishermen and/or hunters (12 and over) in United States was 24,917,000.

1955 fisherman and was not asked whether he held a 1955 fishing license (and similarly for hunting).

Duck-stamp purchases are shown separately in the tables of expenditures of all persons who fished and/or hunted, of all persons who hunted, and of waterfowl hunters.

The survey indicated that 1,986,000 people hunted waterfowl during calendar year 1955. These waterfowl hunters purchase 1,662,000 duck stamps. Since 272,000 waterfowl hunters were in the 12-17 age group, it is presumed that the majority of the 324,000 waterfowl hunters not purchasing duck stamps were below 16 years of age. Any of these not under 16 years of age would of course be hunting illegally.

Although persons who hunted waterfowl during 1955 purchased only 1,662,000 duck stamps, an additional 395,000 hunters purchased these stamps but, for some unexplained reason, did not go waterfowl hunting in calendar year 1955. Thus, the survey indicates that a total of 2,057,000 duck stamps were purchased by hunters during the year. Reports of duck-stamp sales indicate that approximately 2,236,000 stamps were sold in 1955 (including sales to stamp collectors).

OTHER EXPENDITURES

Under other expenses are included club dues, subscriptions to magazines primarily for fishing and hunting, and all other expenditures not specifically classified but incurred as a part of fishing or hunting activities.

Expenditures for dogs kept primarily for hunting are shown separately in the table on all hunting expenditures. In the tables on big-game hunting, small-game hunting, and waterfowl hunting, and in the table on all persons who fished and or hunted, the expenditures for dogs are included in other expenditures.

Expenditure item	Fishermen and/or hunters with expenditures		Total spent	Average spent per fisherman and/or hunter
	Number	Percent of all fishermen and/or hunters		
Equipment:				
Hunting and fishing equipment	17,664,000	70.9	\$594,584,000	\$23.86
Other	7,072,000	28.4	687,708,000	27.60
Trip expenditures:				
Food	8,795,000	35.3	144,587,000	5.80
Lodging	3,675,000	14.7	88,951,000	3.57
Transportation (auto expenses)	22,328,000	89.6	365,799,000	14.68
Other	18,441,000	74.0	699,457,000	28.08
License and lease fees:				
Licenses and stamps	17,698,000	71.0	77,175,000	3.10
Leases and privileges	113,000	.5	3,299,000	.13
Duck stamps	2,057,000	8.3	4,114,000	.16
Other expenditures (includes hunting dogs)	6,803,000	27.3	185,305,000	7.44
WEIGHTED UNITED STATES TOTAL			2,850,979,000	114.42

EXPENDITURES OF PERSONS WHO FISHED IN 1955

The total number of fishermen (12 and over) in United States was 20,813,000.

Expenditure item	Fishermen with expenditures		Total spent	Average spent per fisherman
	Number	Percent of all fishermen		
Equipment:				
Fishing equipment	13,193,000	63.4	\$243,626,000	\$11.70
Other	5,155,000	24.8	550,037,000	26.43
Trip expenditures:				
Food	6,828,000	32.8	106,101,000	5.10
Lodging	2,981,000	14.3	73,080,000	3.51
Transportation (auto expenses)	18,751,000	90.1	271,827,000	13.06
Other	16,723,000	80.3	596,700,000	28.67
License and lease fees:				
Licenses	13,737,000	66.0	37,240,000	1.79
Leases and privileges	54,000	.3	836,000	.04
Other expenditures	4,904,000	23.6	34,845,000	1.68
WEIGHTED UNITED STATES TOTAL			1,914,292,000	91.98

EXPENDITURES OF FRESH-WATER FISHERMEN

SEDAR24-RD40

The total number of fresh-water fishermen (12 and over) in United States was 18,420,000.

Expenditure item	Fishermen with expenditures		Total spent	Average spent per fisherman
	Number	Percent of all fresh-water fishermen		
Equipment:				
Fishing equipment	11,788,000	64.0	\$189,168,000	\$10.27
Other	4,604,000	25.0	359,080,000	19.49
Trip expenditures:				
Food	5,482,000	29.8	80,863,000	4.39
Lodging	2,494,000	13.5	54,819,000	2.98
Transportation (auto expenses)	16,656,000	90.4	228,999,000	12.43
Other	14,315,000	77.7	450,646,000	24.47
License and lease fees:				
Licenses	13,501,000	73.3	35,791,000	1.94
Leases and privileges	52,000	.3	792,000	.04
Other expenditures	4,485,000	24.3	25,195,000	1.37
WEIGHTED UNITED STATES TOTAL			1,425,353,000	77.38

EXPENDITURES OF SALT-WATER FISHERMEN

The total number of salt-water fishermen (12 and over) in United States was 4,557,000.

Expenditure item	Fishermen with expenditures		Total spent	Average spent per fisherman
	Number	Percent of all salt-water fishermen		
Equipment:				
Fishing equipment	2,602,000	57.1	\$54,458,000	\$11.95
Other	1,079,000	23.7	190,957,000	41.90
Trip expenditures:				
Food	1,870,000	41.0	25,238,000	5.54
Lodging	578,000	12.7	18,261,000	4.00
Transportation (auto expenses)	3,841,000	84.3	42,828,000	9.40
Other	4,074,000	89.4	146,054,000	32.05
License and lease fees:				
Licenses	782,000	17.2	1,449,000	.32
Leases and privileges	2,000	.01	44,000	.01
Other expenditures	1,183,000	26.0	9,650,000	2.12
WEIGHTED UNITED STATES TOTAL			488,939,000	107.29

SEDAR24-RD40

EXPENDITURES OF ATLANTIC AND GULF COAST SALT-WATER FISHERMEN

The total number of salt-water fishermen (12 and over) on Atlantic and Gulf coasts was 3,420,000.

Expenditure item	Fishermen with expenditures		Total spent	Average spent per fisherman
	Number	Percent of all Atlantic and Gulf coast salt-water fishermen		
Equipment:				
Fishing equipment	1,904,000	55.7	\$35,165,000	\$10.28
Other	786,000	23.0	80,745,000	23.61
Trip expenditures:				
Food	1,423,000	41.6	21,592,000	6.31
Lodging	430,000	12.6	15,693,000	4.59
Transportation (auto expenses)	2,723,000	79.6	34,335,000	10.04
Other	2,984,000	87.3	118,102,000	34.53
License and lease fees:				
Licenses	92,000	2.7	102,000	.03
Leases and privileges	2,000	.1	44,000	.01
Other expenditures	804,000	23.5	6,084,000	1.78
WEIGHTED UNITED STATES TOTAL			311,862,000	91.18

EXPENDITURES OF PACIFIC COAST SALT-WATER FISHERMEN

The total number of Pacific coast salt-water fishermen (12 and over) was 1,137,000.

Expenditure item	Fishermen with expenditures		Total spent	Average spent per fisherman
	Number	Percent of all Pacific coast salt-water fishermen		
Equipment:				
Fishing equipment	698,000	61.4	\$19,293,000	\$16.97
Other	293,000	25.8	110,212,000	96.93
Trip expenditures:				
Food	417,000	39.3	3,646,000	3.21
Lodging	148,000	13.0	2,568,000	2.26
Transportation (auto expenses)	1,118,000	98.3	8,493,000	7.47
Other	1,090,000	95.9	27,952,000	24.58
License and lease fees:				
Licenses	690,000	60.7	1,347,000	1.18
Leases and privileges				
Other expenditures	379,000	33.3	3,566,000	3.14
WEIGHTED UNITED STATES TOTAL			177,077,000	155.71

EXPENDITURES OF PERSONS WHO HUNTED IN 1955

The total number of hunters (12 and over) in United States was 11,784,000.

Expenditure item	Hunters with expenditures		Total spent	Average spent per hunter
	Number	Percent of all hunters		
Equipment:				
Hunting equipment	9,555,000	81.4	\$350,958,000	\$29.78
Other	3,438,000	29.2	137,671,000	11.68
Trip expenditures:				
Food	3,187,000	27.0	38,486,000	3.27
Lodging	862,000	7.3	15,871,000	1.35
Transportation (auto expenses)	10,128,000	85.9	93,972,000	7.97
Other	4,927,000	41.8	102,757,000	8.72
License and lease fees:				
Licenses and stamps	9,951,000	84.4	39,035,000	3.39
Leases and privileges	78,000	.7	2,463,000	2.1
Deck stamps	2,057,000	17.5	4,114,000	3.5
What they spent for dogs	2,113,000	17.9	121,388,000	10.56
Other expenditures	4,530,000	38.4	26,072,000	2.21
WEIGHTED UNITED STATES TOTAL			936,687,000	79.49

EXPENDITURES OF BIG-GAME HUNTERS

The total number of big-game hunters (12 and over) in United States was 4,414,000.

Expenditure item	Hunters with expenditures		Total spent	Average spent per hunter
	Number	Percent of all big-game hunters		
Equipment:				
Hunting equipment	3,147,000	71.3	\$125,304,000	\$28.39
Other	1,878,000	42.5	64,046,000	14.51
Trip expenditures:				
Food	1,718,000	38.9	17,019,000	3.86
Lodging	637,000	14.4	10,113,000	2.36
Transportation (auto expenses)	4,187,000	94.9	31,739,000	7.19
Other	2,209,000	50.0	42,312,000	9.59
License and lease fees:				
Licenses and stamps	4,223,000	95.7	19,602,000	4.44
Leases and privileges	17,000	1.1	1,939,000	.44
Other expenditures (including dogs)	1,933,000	43.8	11,505,000	2.61
WEIGHTED UNITED STATES TOTAL			323,909,000	73.38

EXPENDITURES OF SMALL-GAME HUNTERS

SEDAR24-RD40

The total number of small-game hunters (12 and over) in United States was 9,822,000.

Expenditure item	Hunters with expenditures		Total spent	Average spent per hunter
	Number	Percent of all small-game hunters		
Equipment:				
Hunting equipment	8,031,000	81.8	\$186,274,000	\$18.97
Other	2,341,000	23.8	46,113,000	4.69
Trip expenditures:				
Food	1,605,000	16.3	16,632,000	1.69
Lodging	162,000	1.6	3,910,000	.40
Transportation (auto expenses)	8,014,000	81.6	50,182,000	5.11
Other	3,218,000	32.8	15,741,000	4.66
License and lease fees:				
Licenses and stamps	8,084,000	82.3	18,195,000	1.85
Leases and privileges	20,000	.2	299,000	.03
Other expenditures (including dogs)	3,867,000	39.4	126,687,000	12.90
WEIGHTED UNITED STATES TOTAL			494,033,000	50.30

EXPENDITURES OF WATERFOWL HUNTERS

The total number of waterfowl hunters (12 and over) in United States was 1,986,000.

Expenditure item	Hunters with expenditures		Total spent	Average spent per hunter
	Number	Percent of all waterfowl hunters		
Equipment:				
Hunting equipment	1,626,000	81.9	\$39,380,000	\$19.83
Other	607,000	30.6	27,512,000	13.85
Trip expenditures:				
Food	495,000	24.9	1,835,000	2.43
Lodging	112,000	5.6	1,548,000	.78
Transportation (auto expenses).	1,813,000	91.3	12,051,000	6.07
Other	899,000	45.3	14,674,000	7.39
License and lease fees:				
Licenses and stamps	1,864,000	93.9	2,928,000	1.47
Leases and privileges	12,000	.6	225,000	.11
Duck stamps	1,662,000	83.7	3,324,000	1.67
Other expenditures (including dogs).	964,000	48.5	12,268,000	6.18
WEIGHTED UNITED STATES TOTAL			118,745,000	59.79

SEDAR24-RD40

HOLDERS OF STATE FISHING AND HUNTING LICENSES

Activity	Column 1	Column 2		Column 3	
	Total number in United States	With licenses		Without licenses	
		Number	Percent of column 1	Number	Percent of column 1
FISHERMEN					
Fished only	13,133,000	7,461,000	56.8	5,672,000	43.2
Fished and hunted (fishing licenses)	7,680,000	6,276,000	81.7	1,404,000	18.3
Total who fished	20,813,000	13,737,000	66.0	7,076,000	34.0
Fished in fresh water	18,420,000	13,501,000	73.3	4,919,000	26.7
Fished in salt water	4,557,000	782,000	17.2	3,775,000	82.8
HUNTERS					
Hunted only	4,104,000	3,274,000	79.8	830,000	20.2
Hunted and fished (hunting licenses)	7,680,000	6,677,000	86.9	1,003,000	13.1
Total who hunted	11,784,000	9,951,000	84.4	1,833,000	15.6
Hunted big game	4,414,000	4,223,000	95.7	191,000	4.3
Hunted small game	9,822,000	8,084,000	82.3	1,738,000	17.7
Hunted waterfowl	1,986,000	1,864,000	93.9	122,000	6.1

FISHING AND HUNTING LICENSES

There are a number of conditions under which fishermen and hunters are not required to purchase licenses in many of the States. Persons under 16 could fish in more than half of the States and hunt in a fourth of them without a license in 1955. In many States persons over 65 and disabled veterans could hunt and fish without licenses. In some States, women and active servicemen did not need licenses. In many States persons could hunt or fish on their own property without a license. Salt-water fishing did not require a license in most coastal States during 1955.

The survey indicated that of the 20,813,000 persons who fished during the calendar year 1955, 13,737,000 purchased fishing licenses at a cost of \$37,240,000, and of the 11,784,000 persons who hunted, 9,951,000 purchased hunting licenses at a cost of \$39,935,000.

For the fiscal year ending June 30, 1955, the States reported sales of 19,625,387 fishing licenses yielding revenue of \$39,501,838,

and 16,241,931 hunting licenses yielding \$42,790,687.

In the past there has been a tendency to treat State license figures as though each sale represented an individual fisherman or hunter, even though it was known that many people purchased more than one license. Although the sales figures above are for the year ending June 30, 1955, sales were probably of about the same magnitude for the calendar year 1955. A comparison of the license statistics from the survey with those from the State sales reports would indicate that several million dollars worth of licenses were sold to fishermen and hunters who did not use them during 1955. It would also indicate that a great many fishermen and hunters purchased more than one license. Of course many of the additional licenses would be of the nonresident type, or special permits, stamps, or tags required for certain game species in some States.

THE TECHNIQUE OF THE SURVEY

THE SAMPLING PLAN

To interview every hunter and fisherman in the United States would be an extremely difficult and costly undertaking. Fortunately, with modern sampling methods, this is not necessary. Highly accurate results can be obtained for the United States as a whole from a comparatively small sample. In such sampling, it is the distribution of the sample rather than its size that makes it truly representative of the total population.

Since information was desired from nonlicensed as well as licensed hunters and fishermen, a sample drawn from State license records would not suffice. To obtain the needed information, a representative sample of households throughout the United States was needed. The method used in selecting this sample for the fishing and hunting survey is known as "area probability sampling." It is the method used by the Bureau of the Census and by most national survey organizations and is considered the best sampling procedure yet developed.

Under the probability sampling method used in this survey, every household in the United States had a known chance of being included in the sample. The households included were selected by statistical formulas rather than by personal choice.

This selection began with the population records of the 1950 census. The 1950 population was divided into segments, and within each segment a large number of small areas ("cells") were assigned, each with specified boundaries but with no specified number of homes. The survey thus became self-adjusting for increases in population since 1950. Where new homes had been built since 1950, increasing an area's population, the sample took note of this increase. With this automatic adjustment, the sample for the whole country indicated a total of 48,389,000 households in 1955, containing a total of 118,366,000 persons 12 years old and older.

On the average, 1 out of every 2,135 households was included in the sample. This provided a sample of about 20,000 households in 1,000 neighborhoods in 48 States. In each of these households all persons 12 years old or older who had fished or hunted in 1955 were eligible for interview.

Although 1 in 2,135 represented the average chance that a household would fall in the sample, the chances actually varied from as high as 1 in 834 for some groups of homes to as low as 1 in 5,579 for others. The reason for sampling different groups of homes at different rates was increased efficiency. When all homes are very much alike, a sample of a few will give a reliable picture of the whole. Where homes differ widely, a larger sample is needed to be sure that the whole range is represented adequately. Where fishing and hunting were very popular activities, homes tended to be fairly uniform in that regard. For purposes of the survey, this meant that the lowest sampling rate was needed where fishing and hunting were most common and the highest rate was needed where they were least common.

Four steps led the interviewer to the door of the sample household:

1. The United States was divided into 16 parts.
2. A statistical formula picked some communities from each part.
3. A statistical formula picked some neighborhoods from each community.
4. A statistical formula picked some houses from each neighborhood.

"Statistical formula" is a short name for the scientific exercise of impersonal chance. The operation of these formulas, coupled with patterns of human behavior which repeat themselves over and over again, makes it possible to find out what happens in millions of homes by examining only a few thousand.

The United States was divided into 16 parts by 4 separations, each in 2 directions. The first separation was made by the density of the population:

1. Rural America
2. Small-town America
3. Big-town and suburban America
4. Large-city America

Inherent inclination to hunt and fish provided the second four-way cut:

- a. Heavy hunting-fishing America
- b. Better-than-average hunting-fishing America
- c. Average hunting-fishing America
- d. Below-average hunting-fishing America

The United States was sliced into 16 parts so that a separate subsample could be taken from each part and the results added together. This served to spread out the sample, thereby providing better dispersion and representativeness. It also made possible the differing sampling rates which enhanced the sample's efficiency.

This division was decided upon because it provided the greatest efficiency under two premises:

1. The more urbanized an area, the less its inhabitants indulge in hunting and fishing.
2. All other things being equal, the inhabitants of some States have a stronger inclination to hunt and fish than those of other States (because of opportunity, customs, and other influences).

To test these premises and measure their importance, a correlation analysis was made of the number of resident hunting and fishing licenses issued by each State against that State's urbanization. This is a statistical procedure that measures and describes mathematically the relation between two sets of facts. The relation proved to be quite strong in this case (36 percent). The strength of the relation showed that it would be most efficient to sample the large cities, big towns, small towns, and rural areas at different rates.

The statistical formulas did all the work in selecting communities, then neighborhoods, and then houses. A "community" was either a center of population concentration, from the largest city down to the smallest village, or what was left over in a township or county when all of these centers were removed.

Communities and neighborhoods for the survey were drawn from Census Bureau lists by means of statistical formulas. The number of houses to be included in each neighborhood had been previously determined. It varied among the 16 parts of the United States, but it was the same in all communities sampled in any one of the parts. The number of houses was based in large part on the number of hunters and fishermen expected to be present in each particular part.

While the number in each neighborhood was thus predetermined, the selection of the actual sample houses was again a matter of chance selection by statistical formula. The interviewer listed all homes in the neighborhood in a certain order on a special listing form but sampled only those whose listings fell in previously marked lines on the form.

THE INTERVIEWING

The survey was conducted on a house-to-house basis by trained interviewers of Crossley, S D Surveys, Inc. Before the actual survey, the elaborate questionnaires, one for fishing and one for hunting, were pretested in a number of areas scattered throughout the United States. Field interviewing for the survey began on January 7, 1956, and continued for approximately 2 months.

A program of advance publicity was carried out before the start of field interviewing. This included official releases to newspapers, magazines, and radio and television stations by the Fish and Wildlife Service, and a number of radio appearances by members of the Crossley firm, all inviting public cooperation.

Field supervisors of the Crossley firm attended training sessions on the survey in the New York office and in turn held similar training sessions for interviewers in their areas. Each interviewer

received a complete manual of instructions on the study and was required to pass a written test on the methods and to conduct practice interviews before the start of the survey.

To assure fullest cooperation and maximum accuracy, each interview was opened with a statement of the survey purpose and a guarantee to keep the identity of the respondent confidential. It was made clear that law enforcement was not a purpose of the study. Each interviewer carried a number of credentials, including an identification badge, a letter of introduction from the Fish and Wildlife Service, and Better Business Bureau identification.

The interviewers visited each household in the national sample up to four times to establish contact with a responsible adult member and to complete interviews. During the initial contact, the interviewer obtained the composition of the family and the names of those members 12 years of age or over who had hunted or fished in 1955. Each hunter or fisherman in the family was then interviewed. One questionnaire was used to record an interview about fishing and another questionnaire to record an interview about hunting.

Since the sportsmen who were interviewed were asked to recall events that had happened during the preceding year, memory aids were used. These consisted of calendars, lists of fish and game species, lists of equipment items, booklets of license requirements, and simplified phraseology of questions.

As each group of households was completed, the results were sent in to the home office where they were checked to be sure that the correct sampling procedure had been followed. Each questionnaire was examined for correct recording in the proper places and for completeness of answers to all questions. In cases of omission and seeming inconsistencies the field supervisor was notified and the respondent was contacted to supply the missing information or to verify what had been recorded.

The same high degree of quality control was maintained during the period when information on the questionnaire was being carded and punched on machine-tabulating cards. Similar care was taken during machine tabulation, and unusual situations were checked immediately for validation.

RELIABILITY OF THE RESULTS

SEDAR24-RD40

The statistical reliability of the major findings of the survey is estimated as follows:

EXPENDITURES OF FISHERMEN AND HUNTERS NUMBER


Projection for number of	Estimated total number	Standard error of the total		Limits between which the figure from a complete enumeration would fall, with a 19 out of 20 probability
		Actual	Percent	
Fishermen and/or hunters	24,917,000	289,000	1.16	24,339,000-25,495,000.
Fishermen	20,813,000	272,000	1.31	20,269,000-21,357,000.
Hunters	11,784,000	199,000	1.69	11,386,000-12,182,000
Salt-water fishermen	4,557,000	155,000	3.40	4,247,000-4,867,000.
Fresh-water fishermen	18,420,000	253,000	1.37	17,914,000-18,926,000.
Big-game hunters	4,414,000	123,000	2.79	4,168,000-4,660,000.
Small-game hunters	9,822,000	183,000	1.86	9,456,000-10,188,000.
Waterfowl hunters	1,986,000	85,000	4.28	1,816,000-2,156,000.

EXPENDITURES OF FISHERMEN AND HUNTERS

Projection for expenditures of	Estimated total expenditure	Standard error of the total		Limits between which the figure from a complete enumeration would fall, with a 19 out of 20 probability
		Actual	Percent	
Fishermen and/or hunters	\$2,850,979,000	\$127,154,000	4.46	\$2,596,671,000-\$3,105,287,000.
Fishermen	1,914,292,000	107,392,000	5.61	\$1,699,508,000-\$2,129,076,000.
Hunters	936,687,000	44,774,000	4.78	\$847,139,000-\$1,026,235,000.
Salt-water fishermen	488,939,000	64,540,000	13.20	\$359,859,000-\$618,019,000.
Fresh-water fishermen	1,425,353,000	58,582,000	4.11	\$1,308,189,000-\$1,512,517,000.
Big-game hunters	323,909,000	23,775,000	7.34	\$276,359,000-\$371,459,000.
Small-game hunters	494,033,000	24,208,000	4.90	\$445,617,000-\$542,449,000.
Waterfowl hunters	118,745,000	10,937,000	9.21	\$96,871,000-\$140,619,000.

TABLE OF CONTENTS

Foreword, 11	
Introduction, 1	
What the survey sought, 3	
How the survey was made, 3	
Graphic presentations, 5-29	
Households with fishermen or hunters, 5	
Persons who fished or hunted, 6-7	
Men who fished, 8	
Women who fished, 9	
Men who hunted, 10	
Women who hunted, 11	
Variation by geographic sections, 12	
Variation by population densities, 13	
Variation by age groups, 14-15	
Expenditures for fishing and hunting, 16-17	
Expenditures for hunting, 18	
Expenditures for fishing, 19	
Salt-water fishing, 20-21	
Automobile mileage, 22-23	
Travel by fishermen, 24	
Travel by hunters, 25	
Licenses, 26-27	
Typical fisherman and hunter, 28	
Days of recreation, 29	
Tables, 30-44	
Number of households, 30-31	
Number of persons who fished and hunted, 32-33	
Fresh-water and salt-water fishermen and big-game, small-game, and waterfowl hunters, 34-35	
Fishing and hunting trips, man-days, and membership in clubs, 36-37	
Expenditures for fishing and hunting, 38-41	
Fishing and/or hunting, 39	
Fishing, 40	
Fresh-water fishing, 40	
Salt-water fishing, 41	
Atlantic and Gulf coast salt-water fishing, 41	
Pacific coast salt-water fishing, 42	
Hunting, 42	
Big-game hunting, 43	
Small-game hunting, 43	
Waterfowl hunting, 44	
Licenses, 44-45	
Technique of the survey, 46-48	
Statistical reliability, 49	
<p>The statistical material in this report was compiled by Crossley S. D. Surveys, Inc., under contract to Fish and Wildlife Service, United States Department of the Interior.</p>	

MBL WHOI Library - Serials

5 WHSE 00103

SEDAR24-RD40

